THE eXPERIMENT

No. 2 TODAY'S CHALLENGE – TOMORROW'S DESTINY Aug. 24, 1999

OSC aids airwar from afar

By Capt. Todd Fleming
Aerospace Command and Control, Intelligence, Surveillance, and Reconnaissance Center Public Affairs

LANGLEY AIR FORCE BASE, Va. – A B-2 enroute to striking a target suddenly gets the word that one of its targets has moved to a new location and another target, discovered moments ago by a satellite, has become a priority. The bomber is redirected while still in flight by the Air Operations Center and its precision munitions are re-targeted to hit the new target locations.

This capability is called Dynamic Precision Strike and is one of many initiatives being experimented with in Joint Expeditionary Forces eXperiment '99. The experiment is designed to improve the Expeditionary Aerospace Force of the future.

Of the nearly 3,100 people taking part in JEFX '99, more than 500 people from around the Air Force, as well as some representatives from the Army, Navy and Marine Corps, came to Langley Air Force Base, Va., to stand up the Operations Support Center.

See OSC, Page 2

Photo by Capt. Geoffrey Fischer

Director's perspective

(Left) J.C. Dominick, MITRE collaborative tool engineer, and (right) Col. Bob Grosvenor, Combined Aerospace Operations Center director, review some paperwork from the command platform as the CAOC goes on line for the kick off of the Joint Expeditionary Force eXperiment '99 Monday.

Spirit of Billy Mitchell at JEFX '99

By Tech. Sgt. Mark Kinkade
Air Force Print News

LANGLEY AIR FORCE BASE, Va. – When Billy Mitchell tried to sink a battleship with bombs dropped from aircraft, he was experimenting. That spirit of experimentation is back in the form of the Joint Expeditionary Force eXperiment '99, taking place during the next two weeks here and at various locations worldwide.

JEFX '99 is an environment dedicated to assessing new technology and procedures geared toward improving the way the Air Force wages war.

Warfighters – the pilots, crew chiefs, security forces and others – join defense contractors and expert assessors to find out if the technology works, how it can be fixed if it doesn't and what new ideas will best suit the Air Force of the 21st century.

"The way we experiment changed during the Cold War," said Randy Schmidt, an Air Force technology expert with the JEFX '99 team. "We took acquisition of new technology out of the hands of the people who use it and let the engineers decide what we needed."

But the lighter, leaner, more lethal Air Force of the next century needs products hand-tailored for the fight, he said. No longer can the service simply order a product and hope it works.

"These experiments are aimed at warfighters, not engineers," he said. "(The

See MITCHELL, Page 4

Staff selectees

Two additional Joint Expeditionary Force eXperiment '99 members were selected for promotion to staff sergeant Aug. 19.

The senior airmen are:

Brian Clark and Matthew E. Ferguson.

A complete list of the new staff sergeants is at http://www.afpc.randolph.af.mil.

Emergency contact numbers during JEFX

Emergencies can happen to anyone at any time.

During a deployment or temporary duty assignment, such as Joint Expeditionary Force eXperiment '99, knowing the right numbers and people to call can be critical in the event of an emergency.

Each of the three major experiment locations has a first sergeant and a 24-hour duty section which may be contacted in the event of an emergency.

Langley AFB, Va.

Primary point of contact – Master Sgt. Ray LaGasse, Langley first sergeant. Work phone (757) 225-5176; Pager 988-2114

Alternate POC – Langley Joint Personnel Access Center (24-hour access). Phone (757) 225-1274.

Hurlburt Field, Fla.

Primary POC – First sergeant: Master Sgt. Dan Kuhn, Hurlburt first sergeant. Work phone (850) 884-7204; Home phone (850) 651-6462; Pager (850) 885-1984

Alternate POC – Hurlburt JPAC (24-hour access). Work (850) 884-7226

Nellis AFB, Nev.

Primary POC – Master Sgt. Jeffery Holloway, Nellis first sergeant. Cellular phone (702) 375-7464

Alternate POC – Nellis JEFX locator (24-hour access). Phone (702) 652-9892.

OSC (Continued from Page 1)

The OSC is a beehive of activity, with nearly 250 people operating out of an auditorium-sized room at computer consoles. People assigned here help plan and direct an air campaign that is happening about a thousand miles away at Hurlburt Field in Florida. Besides the operators at the computers, there are approximately 90 communications and 75 systems specialists to ensure that the network and computer architecture runs smoothly. The operators are made up of many career fields with such diverse functions as air battle managers, intelligence, weather, legal, fuels and maintenance personnel among many others.

Langley's OSC is part of a concept called distributed collaborative operations. Under this concept, the Air Force is experimenting with sending less equipment and fewer people to the deployed location with much greater support coming from the rear operations support center. This will save money, reduce deployment durations and reduce demands on our mobility assets, according to Maj. Rick Coveno, systems watch officer for the OSC.

"This is a way of keeping people at their normal location while providing the same amount of support to the warfighters," said 1st Lt. Stacy Kreuzinger, OSC chief of target development.

"We want to become more expeditionary so we don't have to take as many people and as much equipment forward," added Col. Terry Thompson, director of the Air Force Experimentation Office.

But, in order for the OSC to provide the support that is needed by the forward air operations center, it needs to have the ability to communicate effectively with that center.

"The key to being integrated while distributed is what we call the collaborative tools," said Coveno. "It allows you to have a virtual workspace or meeting. It's very similar to an online chat room with much greater capabilities, such as file transfers, live voice and white board collaboration."

One of the primary functions of the OSC, according to Coveno, is the generation of the integrated tasking order while the forward AOC is the lead on execution of the integrated tasking order. An ITO gives all of the information that is necessary for the warfighters to put their bombs on target. This includes the necessary tanker support, the routes and altitudes to be flown, ammunition to be loaded and target coordinates identified among other things. It is the script that everyone follows. This has traditionally been called an air tasking order, but with the integration of space-based assets and with new information from our sister services, it is now more appropriately being called the ITO.

Members of the OSC indicated that they have benefited from the lessons learned in EFX '98, the first expeditionary forces experiment.

"Compared to last year, things at the OSC appear to be integrated very well," Kreuzinger said. "The systems are a lot more stable. We're definitely applying last year's lessons."

Although the OSC is only being used during experimentation, it will become a permanently manned facility under Air Combat Command by 2002.

THE EXPERIMENT

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THE EXPERIMENT STAFF

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To most adults there are no such thing as wizards.They are just imaginary people who entertain, dazzle or torment the unwary; however, JEFX has it's own real-life wizards who are ...

Making the experiment possible

By Capt. Geoffrey Fischer
Command and Control Training and Innovation Group Public Affairs

Photo by Capt. Geoffrey Fischer

Two of the "wizards," Mike Smith and Zack Kastl, model controllers, can be seen through the curtains of wires that make the warfighting scenarios possible.

HURLBURT FIELD, Fla. – "Pay no attention to the man behind the curtain!" says the "wizard" in the Wizard of Oz, as he madly presses buttons and pulls levers.

His job was to make the Wizard real for whom ever wanted to talk to him. And just like the Wizard, we have a group of people making Joint Expeditionary Force eXperiment 1999 real to the participants.

"We're the 'person' behind the curtain," said Maj. Hartley Kinsey, 505th Exercise Control Squadron director of operations.

"Our whole job is to provide the stimulus and inputs to the players that are doing the action."

In JEFX '99 the players are experimenting with new equipment and processes to further integrate space-based capabilities and information into our aerospace operations of the future.

And the key to making JEFX '99 successful is to make it as real for the players as possible. That's where the people from the 505th Systems Squadron and 505 ECS are important.

"These inputs should be absolutely real," Kinsey said. "As far as they know, it's going to be the same as they would see in Korea, the Persian Gulf or wherever they might deploy."

The team on the second floor of the Command and Control Training and Innovation Group building at Hurlburt Field is putting together a virtual battle space over a fictitious country and making it as real as possible for the players.

> ***"If the players need a general, we're a general. If they need to talk to a pilot, we put on headphones and talk like a pilot."***
> – Maj. Hartley Kinsey
> 505th Exercise Control Squadron director of operations

They are combining real inputs from planes flying over ranges at Nellis Air Force Base, Nev., and putting them with computer generated aircraft onto the same system that the players are looking at. They do it so well that when the players look at the screen, they can't tell the difference between the real and the computer aircraft.

"We want to produce a virtual picture of an air war and all of its logistics," Kinsey said. "If people in an area need food, we need to schedule aircraft to fly beans. Just like we would in a real operation."

In order for the players to have a complete picture, 20 different types of computer systems need to be linked together.

"We started working on the models and equipment months in advance," Kinsey said.

"It's been a build-up through the different spirals," said Tech. Sgt. Dan Brown, 505 SYS night-shift supervisor.

Spirals are the development processes leading up to the experiment where they determine which systems are needed and how they will work together, tailored specifically for the objectives of the experiment.

"We make sure everything is working by the time the player sits down," Brown said.

"Without our inputs, the equipment they are using wouldn't show anything," Kinsey said.

"They would be getting a piece of paper with a note that shows what they *should* be seeing and that's not what they need to experiment successfully."

Throughout the experiment team members also play live roles of whoever is needed, Kinsey said.

"If the players need a general, we're a general. If they need to talk to a pilot, we put on headphones and talk like a pilot," he said.

In the make-believe world of JEFX '99 it is the 505 ECS and 505 SYS teams that are the wizards pushing the buttons and pulling the levers to make it as real as possible.

AMC uses JEFX to assess mobility processes

By Staff Sgt. Ed Scott
Air Warfare Center Public Affairs

NELLIS AIR FORCE BASE, Nev. – "We're trying to ensure commander's have the right equipment to fight and get the job done," said Lt. Gen. Lansford E. Trapp, Jr. 12th Air Force and U.S. Southern Command Air Forces commander.

With this goal in mind, Joint Expeditionary Force eXperiment '99 will look at how Air Mobility Command assesses the process of mobilizing mobility assets in support of a contingency.

According to General Trapp, the exercise also gives the chief of staff an avenue to explore various resources that will be attainable in the near future.

"Last year's experiment focused on technology and this year we are focusing more on the process," Trapp said.

"Technology is moving at breakneck speeds and we need to leverage this to our advantage. But the technology cannot be utilized to its full potential if we do not effectively prosecute the process."

Studies show that information for theater commanders flows in from numerous resources making the assimilation of this information arduous for commanders.

"JEFX will ensure everyone from battlefield commanders to flight leads have the best information to prosecute their directives," he said.

One advantage that could be achieved through the experiment is a continuous global situational awareness.

"Lessons learned from JEFX could allow commanders to know the status of their assets – from when it was shipped to its exact location at that given moment."

General Trapp said this will give everyone the ability to better correlate between the mobility and combat missions and paint a clearer picture of the theater and the type of tactics to use.

Using the maxim "train the way you fight and fight the way you train," this year's JEFX is a joint and coalition exercise with 18 international participants as well as the Army, Navy and Marines.

"The military today is faced with limited resources and there is a lot of stuff – electronics to experiment with to fine tune our processes," General Trapp said. "But electronics cannot replace the people. People make it all happen."

Mitchell (Continued from Page 1)

warfighters) tell us what works and what doesn't, and the contractor is on hand to see if they can tailor the product."

Participants gathered here invoke the spirit of Billy Mitchell as they go about the process of looking at the latest technology advances. The goal, according to Col. Terry Thompson, Air Force Experimentation Office director, is to see if something works, or how it can work better.

> ***"We want to find the best way to wage war, much like Billy Mitchell was trying do when he bombed battleships."***
>
> – Col. Terry Thompson
> Air Force Experimentation Office director

"We're willing to see something fail," he said. "We want to find the best way to wage war, much like Billy Mitchell was trying do when he bombed battleships."

This year, experts from virtually every Air Force career field will analyze 59 initiatives during a series of simulated war scenarios.

The list of initiatives reads like a computer science textbook with a healthy dose of acronym alphabet soup thrown in for taste. However, emphasis is on command and control and space-based technologies.

Some initiatives include:

- ❑ Exploring the viability of doing some battlefield planning at rear-support locations, reducing the number of people and resources in forward high-threat locations.
- ❑ The use of "collaborative tools" to connect various command centers in planning the beddown and sustainment of forward-based forces.
- ❑ Integrating near-real-time psychological operations with aerospace expeditionary forces.

Not all initiatives will bear fruit at JEFX '99, Schmidt said. Through a series of mini-experiments called "spirals" conducted throughout the year, JEFX organizers weeded out many initiatives.

"Spirals help us build a little, test a little and field a little as we go," said Maj. David Smith.

Some of those initiatives from EFX '98 are in use today, including a few used in the air campaign over Kosovo. Examples include:

- ❑ A joint targeting workstation that linked several sources of information in determining targets in Kosovo.
- ❑ The computer systems firewall in use throughout the Air Force today. EFX '98 analyzed the proposed firewall the Air Force considered buying and discovered holes in the level of security it provided for computers. Based on EFX '98 recommendations, the Air Force went to another firewall.

Initiatives are divided into three categories during JEFX. The first category includes those carried over from the previous EFX and must be in the field within six months if approved for use. Second category "discoveries," as Schmidt calls them, will probably be in use within 18 months.

The third category is for initiatives that don't have an application, but are just too good to ignore. For example, one of this year's Category Three experiments involves a space-based laser used to destroy ballistic missiles, like the Scud missiles launched by Iraqi forces in the Gulf War. The technology is geared for warfighting 20 years from now, but JEFX gives people the opportunity to assess the tools today.

"It has value, and it may have a role in the future," Schmidt said. "We can take a look at it now and see if it's worth waiting for."

COMM team wires experiment for sound

Computers, communications hardware, equipment vital to JEFX

By Senior Airman J.A. Lindsey
JEFX Public Affairs

HURLBURT FIELD, Fla. – Inside a 15-by-25 steel encased box resembling a heavy metal packing crate from the outside, camouflage-clad airmen of all grades work intimately with computers, deployable communications hardware and other communications equipment. The constant chatter about hookups, troubleshooting, codes and acronyms mimics the monotone humming of a social event.

Capt. Jeffrey Schwefler, Joint Expeditionary Force eXperiment communications director, breaks away from troubleshooting network connections between Mountain Home Air Force Base, Idaho, Nellis AFB, Nev., Langley AFB, Va., and Hurlburt Field to speak about the challenges of preparing for the experiment's execution phase.

"One of the biggest challenges for communications here is the integration of numerous systems we've never seen or worked with before," Schwefler said.

"The hardest part is that many of the new systems are very demanding on the network. A robust communications infrastructure is required to support these complex systems."

Since April, the JEFX communication team, which ranged from eight to the current number of thirty people, has been building the robust infrastructure needed to support Spiral Two, Three and the final execution phase of this year's experiment, which kicks-off Aug. 23.

"If you see a piece of wire, we probably ran it and maintain it – it's everywhere," Schwefler said smiling. "We're responsible for setting up and breaking down all the communication systems being utilized in the JEFX Combined Air Operations Center and portions of the Model and Simulations Control Center. The systems here are borrowed, so I have a stack of hand receipts about 3 inches thick to go through to account for all the equipment."

Photo by Senior Airman J.A. Lindsey

(From left) First Lt. John Vickery, Joint Expeditionary Force eXperiment NOSC-D crew commander, Master Sgt. Marc Andreoni, JEFX systems controller, and Capt. Jeffrey Schwefler, JEFX communications director, troubleshoot network connections between Mountain Home Air Force Base, Idaho, Nellis AFB, Nev., Langley AFB, Va., and Hurlburt Field.

Before the execution phase had even started, the communications team had already learned useful new information and passed it on to those working similar issues in Bosnia and Southwest Asia and to technical instructors so they can pass the information to newly trained airmen.

"We suggested units deploying to these regions bring a specially designed interface cable originally developed here during Spiral Two," Schwefler proudly shared. "(Exercises and experiments) are never a wasted effort for us. We're always learning and innovating in the complex business of communications."

In addition to troubleshooting deployment set-up challenges, the communications team, also has to maintain system security, keeping close watch on communications anomalies.

"We've already detected a suspected attack on our JEFX infrastructure," Schwefler explains. "Whenever communications detects unexplained changes on a system, we go immediately into defense mode. We can't afford to wait – we have to take system security seriously."

Setting up and maintaining communication systems is just part of the battle for this team – after the event's over, then comes the clean up.

"For this experiment, we turned the lights on and we'll turn them off Sept. 8, when the last borrowed computer is shipped out."

From beginning to end, the common denominator of JEFX '99 is establishing, evaluating and improving communications. A challenge the JEFX communication cell is meeting with their enthusiastic ability to adapt and overcome.

When experiencing technical problems with your computer, phone or teleconferencing equipment during the experiment, call your cell's assigned help desk.

JEFX transportation schedule, information

Transportation can sometimes be a logistics nightmare when dealing with a large number of people and the different lodging locations such as what is being experienced during the Joint Expeditionary Force eXperiment '99.

Because there are a limited number of vehicles available at each site, those who have been assigned vehicles are encouraged to car pool. Also, school recently began in several areas so drivers need to be aware of the school speed zones and drive with caution in those areas

JEFX participants without access to a vehicle can contact their local transportation cell by using the following information.

Langley Air Force Base, Va.

There is a shuttle run scheduled from 6:30 a.m.-8:40 p.m. between the hotels and the experiment areas.

The shuttle leaves the Omni at 6:30 a.m. and 7:30 a.m. and returns at 6:30 p.m. and 7:30 p.m. Shuttles leave the Quality Inn, Hampton Inn, Holiday Inn and Candle Wood at 6:40 a.m. and 7:40 a.m. and return at 6:40 p.m. and 7:40 p.m. The shuttle for the OSC/NOSC leaves at 7:40 a.m. and 8:40 a.m. and returns at 7:40 p.m. and 8:40 p.m.

For transportation at all other times, call the 24-hour shuttle dispatch at 764-5714.

Nellis AFB, Nev.

There is a shuttle run scheduled from 6:30 a.m.-5 p.m. between the World Trade Center hotel and the Battle Control Center and the Expeditionary Operations Center. The shuttle leaves the hotel at 6:30 a.m. and arrives at the BCC and EOC at 7 a.m. The shuttle leaves the BCC and EOC at 4:30 p.m. and arrives at the hotel at 5 p.m. Twenty-four hour transportation is available by calling 379-6206.

Hurlburt Field, Fla.

A lunch shuttle runs from 11 a.m.-1 p.m. from Bldgs. 90063 and 90005 to four on-base eateries. There is no transportation schedule to and from hotels. Call 884-7266 for 24-hour transportation service.

News notes

Public affairs

Story ideas and information for The eXperiment can be submitted to your local public affairs representatives.

Hurlburt Field, Fla. – Staff Sgt. Karin Wickwire or Senior Airman Jennifer Lindsey at the Joint Personnel Access Center in Bldg. 90005 or call 884-8342.

Langley Air Force Base, Va. – 2nd Lt. Dani Burrows at the JPAC in Bldg. 12 or call 225-1262.

Nellis Air Force Base, Nev. – Staff Sgt. Paul Coupaud at the JPAC in Bldg. 254 or call 652-9891.

The eXperiment newsletter will be published on the following dates: Aug. 27, Aug. 31 and Sept. 3. The newsletter is also available on the Air Force Experimentation Office website at http://afeo.langley.af.mil/afeo_ newsletters.htm.

Hurlburt Field, Fla.

Hurricane locator sheets

All personnel located at Hurlburt Field, Fla., during JEFX '99 need to fill out a Hurricane Locator Sheet. Due to Florida's hurricane season, which runs through Nov. 1, it's important this information is accurate. In the event of a hurricane, people who are caught away from their designated shelter locations must call (800) 435-9941 so they can be accounted for.

Hurlburt weekend trip – canoe

There is a canoe trip on Coldwater Creek beginning at 8 a.m. Saturday, Aug. 28 leaving from Bldg. 90005. The seven-mile trip down river will take approximately four hours.

The cost is $16 per person for a two-person canoe. Swimsuits and sunscreen are recommended and food and drinks may be taken on the trip; however glass containers are not allowed.

Hurlburt weekend trip – fishing

A deep-sea fishing trip is from 7 a.m.-2 p.m. Sunday, Aug. 29 leaving from Bldg. 90005. The six-hour fishing trip will leave on the Sweet Jody V which is docked behind Fisherman's Wharf, Destin, Fla.

The cost is $32 per person and includes bait, reels and poles. No food will be available on the boat so sack lunches and drinks are recommended.

People are encouraged to take a motion sickness medication at least one hour prior to getting on the boat if they have never been out to sea or if they know they are subject to motion sickness. Sunscreen and towels should also be brought on the trip.

Any person interested in these trips should contact Master Sgt. Dan Kuhn, the Hurlburt Field first sergeant, in trailer 11 behind Bldg. 90005 or call his work phone at 884-7204; his pager at 885-1984; or his home phone at 651-6462.

People who are working these days should contact the first sergeant who will work with them to set up activities and trips during their off-duty hours.

Hurlburt outdoor recreation

Outdoor recreation is open from 9 a.m.-5 p.m. daily. Boats and snorkel equipment are available. For more information, call 884-6939.

Hurlburt Marina

The Hurlburt Marina is open from 8 a.m.-6 p.m. weekdays and 7 a.m.-6 p.m. weekends. Boat, canoe and camping supplies are available.

Waverunners are also available to rent.The cost is $25 per hour and $15 for 30 minutes. For more information, call 884-4097.